

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: IT for Forensics Program: Int. B.Tech. –CSE+CyberLaw Course Code: CSEG424	Semester: VIII Time 03 hrs. Max. Marks: 100
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Instructions: Attempt all Questions

SECTION A

S. No.	Question	Marks	CO
Q 1	What are the basic shortcomings in present security systems that can be addressed through biometrics? Explain by relevant examples.	4	CO1
Q 2	State and explain the desired general properties of all watermarking systems.	4	CO4
Q 3	How are steganography and cryptography different? How is cryptography an important aspect in steganography and why is it necessary?	4	CO2
Q 4	What are various types of watermarking systems? Explain	4	CO4
Q 5	Explain the concept of Robust Steganography and Supraliminal Channels.	4	CO2

SECTION B

Q 6	What are various Unused or Reserved Space in Computer Systems? Explain how they can be utilized in steganography. Explain major types of watermarking? List and explain major applications of watermarking. <p style="text-align: center;">Or</p> List and explain the three types of steganographic protocols. How is ‘robustness’ of a steganographic method related to active attackers?	10	CO2
Q 7	State and explain the generic Discrete Cosine Transformation? What are phase coding and echo hiding in digital sound steganography?	10	CO4
Q 8	List and explain the three types of steganographic protocols. How is ‘robustness’ of a steganographic method related to active attackers?	10	CO4
Q 9	How do you envisage biometric applications in a) commercial b)government and c) forensic groups? Explain by examples.	10	CO1

SECTION-C

Q 10	<p>Write short notes on:</p> <ul style="list-style-type: none"> i) Spread Spectrum and Information Hiding ii) Adaptive vs non adaptive steganographic algorithms iii) Supraliminal Channels iv) Bitstream and fragile watermarking. 	5x4=20	CO3
Q 11	<p>Consider the following Assumptions with a biometric system.</p> <p>Assumption <i>With respect to privacy concerns, both service provider and database are assumed to be malicious which means they may deviate from the protocol specification, but they will not collude. In reality, an outside adversary may also pose threats to the privacy concerns, however, it has no more advantage than a malicious system component.</i></p> <p>In your own way try to describe the assumption and elaborate the cases that will arise/affected if this assumption holds. Please elaborate in not less than 250 words.</p> <p style="text-align: center;">Or</p> <p>State the algorithm and Explain the general LSB and the Random Interval LSB methods. How are the collisions handled during these methods? State various LSB substitution methods in Image steganography. Analyze each for security.</p>	20	CO1, CO2